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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,375	04/22/2004	Shiro Yamaoka	056209.52219D1	7095
23911	7590	09/24/2004	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300				DOLINAR, ANDREW M
		ART UNIT		PAPER NUMBER
		3747		

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/829,375	YAMAOKA ET AL.
	Examiner Andrew M. Dolinar	Art Unit 3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7,12-14 and 16-18 is/are rejected.
- 7) Claim(s) 8-11 and 15 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 10/390,771.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/13/04.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 4 is drawn to a control apparatus having both a vibration detecting sensor and a cylinder pressure sensor, which does not appear to be supported by the application as filed.

Claim 18 is drawn to a control method including both a cylinder pressure sensor and the function of analyzing a vibration frequency, which does not appear to be supported by the application as filed.

Claims 4 and 18 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 14, 15 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 3 and 17, the phrase "and the like" renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by "and the like"), thereby rendering the scope of the claims unascertainable. See MPEP § 2173.05(d).

Claim 14 recites the limitations "the cylinder pressure peak value", "the predetermined range" and "the predetermined period of time". It is not clear what these limitations are intended to refer to since they have insufficient antecedent basis in the claim.

Claim 15 recites the limitation "the user of the equipment". It is not clear what this limitation is intended to refer to since it has insufficient antecedent basis in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheklich (US 4,466,408). The combustion control system of Cheklich provides for control of compression ignition peak cylinder pressure as disclosed at column 2, lines 8-34. Control is responsive to a signal from pressure sensing means 28.

Claims 1, 3, 5 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwakiri et al (US 6,354,264 B1). The combustion control system of Iwakiri et al provides for control of compression ignition combustion state according to an estimated combustion condition determined using a cylinder pressure sensor as disclosed at column 3, line 50, to column 4, line 17. Regarding claim 3, combustion state is controlled according to an engine operating condition (e.g. speed), operating condition of a piece of equipment (e.g. exhaust catalyst) and intention of a user (e.g. load). See column 6, lines 63-67, and column 13, lines 24-40. Regarding claim 14, peak pressure control is employed as disclosed at column 5, lines 23-35.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwakiri et al (US 6,354,264 B1). Iwakiri et al discloses the claimed invention including internal EGR as stated above except for valve overlap in the specified ranges. It would have been an obvious matter of routine optimization to one having ordinary skill in the art at the time the

Art Unit: 3747

invention was made to provide operation of the combustion control system of Iwakiri et al with valve overlap in the specified ranges. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 16 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 21 of copending Application No. 10/390,771. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to common subject matter such that any control method that infringes claim 21 of the copending application would also infringe claim 16 of this application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 17 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 21 of copending Application No. 10/390,771 in view of Iwakiri et al (US 6,354,264 B1). Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to an obvious variation common subject matter. Any control method that infringes claim 21 of the copending application would also infringe claim 17 of this application except for control based on the specified conditions. Iwakiri et al teaches control of combustion state according to an engine operating condition (e.g. speed), operating condition of a piece of equipment (e.g. exhaust catalyst) and intention of a user (e.g. load). See column 6, lines 63-67, and column 13, lines 24-40. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of claim 17 of this application to provide control based on the specified conditions, as taught by Iwakiri et al, in order to accommodate variations of engine operating conditions.

This is a provisional obviousness-type double patenting rejection.

Allowable Subject Matter

Claims 8-11 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew M. Dolinar whose telephone number is (703) 308-1948. The examiner can normally be reached on Mon. - Thu. 7:45 - 6:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on (703) 308-1946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Andrew M. Dolinar
Primary Examiner
Art Unit 3747

AMD